

REMARKS/ARGUMENT

Request for Continued Examination:

A Request for Continued Examination has been submitted herewith.

Request for Personal Interview:

A personal interview with the Examiner is respectfully requested. Applicants' representative will contact the Examiner to set a mutually convenient date and time.

Regarding the Claims in General:

Claims 2-5, 7-9, 12-16, 20-21, 25-30, 32, 34-35, 37, 38, and 40-54 are now pending. Claims 1, 17-19, and 31 have been canceled without prejudice and have been replaced by new claims 40, 44-46, and 47 respectively, and claims 2-5, 8-9, 14-16, 20, 21, 25-27, 30, and 32 have been amended to better highlight the distinguishing features of the invention, to improve the form thereof, and to correct dependency as necessary. Claims 7, 12, 13, 28, 29, 34-35, 37, and 38 have also been amended to correct dependency.

New claims 41-43 and 48-54 have been added to provide applicants with additional protection to which they appear to be entitled in light of the known prior art.

The claims now recite more explicitly what was already at least implicit in the claims as previously presented, and have therefore not been narrowed for statutory purposes related to patentability.

Regarding the Objection to Claim 17:

Applicants respectfully take exception to the Examiner's characterization of claim 17 as improper in form. The third and fourth paragraphs of 35 U.S.C. §112 do not place any restriction on the form of a dependent claim except that it further limit the claim on which it depends. That is clearly the case with respect to claim 44 which has replaced claim 17, since it is directed to a combination which includes the subcombination recited in parent claim 40. Nor is there anything in 37 C.F.R. §1.75 or in the Manual of Patent Examining Procedure which prohibits a claim in this form.

If this objection is adhered to, the Examiner is respectfully requested to point out appropriate supporting authority.

Further in regard to claim 17, it is noted that in the disposition of claims section of the Office Action summary, Item 6 indicates that claim 17, along with claims 1-16 and 18-39 are rejected. However, in the detailed action, the only mention of claim 17 is in Section 2. It is therefore not known if the Examiner considers the substance of claim 17 (now claim 44) to be allowable, or whether it was his intent to include it within one of the rejections stated in Sections 4 or 7 of the Office Action.

Nevertheless, to advance the prosecution, the patentability of claim 44 over the prior art of record will be discussed.

Regarding the Prior Art Rejections:

In the outstanding Office Action, claims 1-2, 4, 8, 10-12, 18-19, 21, 25, 27-28, 31, and 34-39 were rejected as being anticipated by Kuroda et al. U.S. Patent 3,814,931, and claims 3, 5-6, 9, 13-16, 20, 22-23, 26, 29-30, and 32-33 were rejected as being unpatentable over Kuroda. Applicants respectfully submit that these rejections are not applicable to the claims presently pending. Reconsideration and withdrawal of these rejections are accordingly respectfully requested.

It is assumed that the Examiner recognizes that the apparatus of Kuroda and that of the present application are intended for entirely different purposes. Kuroda's problem is to identify and reject oversized bodies and caps which are to be assembled into medicine capsules. The present invention, in contrast, is concerned with assuring that a pick and place apparatus for semiconductor chips has successfully engaged the chip for transfer from one location to another, and has successfully deposited the chip at the second location. Both devices perform their operations optically using a light emitter and detector, but the two devices are entirely different in both construction and function.

For example, new claim 40 which has replaced original claim 1 is directed to an assembly which includes a collet operable to pick up a target object for transportation from a first location to a second location and an optical apparatus for detecting the presence or absence of the target object at a holding site on the collet. As stated in this claim, the optical apparatus comprises:

a source of light for illuminating at least a portion of the holding site;
and

a light detector for receiving illuminating light reflected from the target object if it is present at the holding site,

wherein at least one of the light from the light source and the light received by the detector moves with the collet while the collet moves from the first to the second location.

None of the above-stated limitations is found in Kuroda. In the reference, the source of illumination is not directed at a holding site on collet 14, but rather in the space immediately in front of the collet to detect an oversized capsule body.

Likewise, Kuroda's light detector receives reflected light when the capsule body is *not* present in collet 14, as may clearly be seen from the description at column 2, line 53 through column 3, line 3.

Finally, by no reasonable interpretation of the Kuroda, can it be said that one of the emitted and reflected light beams travels with collet 14. The only movement of the light beam is the vertical and horizontal positioning during setup of the apparatus. The sensing activities are disabled during the times collet 14 could interfere with the passage of the light beam.

Claim 40 is accordingly not anticipated by Kuroda.

New method claim 45 which has replaced claim 18 similarly recites the distinguishing features of the invention discussed above, but in method terms. Thus, claim 45 calls for:

illuminating at least a portion of the holding site;

arranging a light detector to receive illuminating light reflected from the target object if it is present at the holding site and to provide an output representative of the reflected light; and

determining the presence or absence of the target object at the holding site on the basis of the detector output,

wherein at least one of the illuminating light and the light received by the detector moves with the collet when the collet is moved from the first to the second location.

From the discussion above in connection with claim 40, it should be apparent that the apparatus of Kuroda is not constructed in a manner which would permit it to perform these steps. Claim 45 should therefore also be allowed.

Claim 47 is directed to a method for handling a target object. The claim includes the steps related to detecting the presence or absence of the target object at the holding site discussed above in connection with claim 45, and distinguishes over Kuroda for the same reasons.

In addition, this claim recites other aspects of the object handling method which are not disclosed, taught, or suggested in Kuroda. These include:

making an attempt to pick up the target object at the first location with the collet;

then moving the collet from the first to the second location;
illuminating the holding site with light from the light source after the attempt has been made to pick up the target object and detecting any light received by said detector resulting from said illumination; and

making a determination of the presence or absence of the target object at the holding site based on an output signal from the detector.

Claim 47 is allowable over Kuroda for these additional reasons.

All the remaining claims are directly or indirectly dependent on one of claims 40, 45, and 46, and are allowable for the reasons stated above. In addition, these claims recite features which, in combination with the features of their respective parent claims are neither taught nor suggested in Kuroda.

In view of the foregoing, favorable reconsideration and allowance of this application are respectfully solicited.

EXPRESS MAIL CERTIFICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail to Addressee (mail label #EV 342541084 US) in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on August 17, 2005

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Name of Person Mailing Correspondence

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Signature

August 17, 2005

Date of Signature

LAH:lac

Respectfully submitted,

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